6HE5

Beam Power Tube

Duodecar Type

For Vertical-Deflection-Amplifier Circuits in TV Receivers

ELECTRICAL CHARACTERISTICS – Bogey Values

Heater Voltage, ac or dc . .	E_h		6.3	V
Heater Current	I_h		0.8	A
Direct Interelectrode Capacitances:[a]				
Grid No.1 to plate	c_{g1-p}		0.54	pF
Input: G1 to (K,G3,G2,H)	c_i		9.5	pF
Output: P to (K,G3,G2,H)	c_o		7.0	pF
For the following characteristics, see Conditions below:				
Plate Resistance (approx.) .	r_p	–	50000	Ω
Transconductance	g_m	–	4100	μmho
DC Plate Current	I_b	180[b]	43	mA
DC Grid-No.2 Current	I_{c2}	20[b]	3.5	mA
Cutoff DC Grid-No.1 Voltage for I_b = 100 μA.	$E_{c1(co)}$	–	-50	V
Conditions:				
Heater Voltage	E_h	6.3	6.3	V
DC Plate Voltage	E_b	60	250	V
DC Grid-No.2 Voltage	E_{c2}	250	250	V
DC Grid-No.1 Voltage	E_{c1}	0[c]	-20	V

MECHANICAL CHARACTERISTICS

Maximum Overall Length 2.875in (73.02mm)
Maximum Seated Length 2.500in (63.5mm)
Maximum Diameter 1.188in (30.1mm)
Dimensional Outline . . . . JEDEC 9-60
Envelope . . . . JEDEC T9
Base . . . . . . Small-Button Duodecar 12-Pin (JEDEC E12-70)
Terminal Diagram . . . . JEDEC 12EY
Type of Cathode . . . . Coated Unipotential
Operating Position . . . . Any

MAXIMUM RATINGS – Design-Maximum Values[d]

For operation as a Vertical-Deflection-Amplifier Tube in a 525-line, 30-frame system

DC Plate Supply Voltage	E_{bb}	350	V
Peak Positive-Pulse Plate Voltage[e] .	e_{bm}	2500	V

6HE5

DC Grid-No.2 (Screen-Grid) Voltage .	E_{c2}	300	V
Heater-Cathode Voltage:			
Peak	e_{hkm}	±200	V
Average	E_{hk}	100	V
Heater Voltage, ac or dc	E_h	5.7 to 6.9	V
Cathode Current:			
Peak	i_{km}	260	mA
Average	$I_{k(av)}$	75	mA
Grid-No.2 Input	P_{g2}	2.75	W
Plate Dissipation[f]	P_b	12	W
Envelope Temperature (at hottest point on envelope surface.)	T_E	200	°C

MAXIMUM CIRCUIT VALUES

Grid-No.1-Circuit Resistance			
With fixed bias	R_{g1}	1.0	MΩ
With cathode bias	R_{g1}	2.2	MΩ

[a] Measured without external shield in accordance with the current issue of EIA Standard RS-191.

[b] This value can be measured by a method involving a recurrent waveform such that the Maximum Ratings of the tube will not be exceeded.

[c] Applied for two seconds maximum so as not to damage tube.

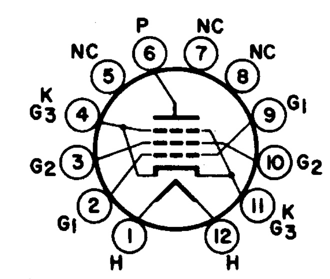
[d] Unless otherwise specified, as defined in the current issue of EIA Standard RS-239.

[e] This rating is applicable when the duration of the voltage pulse does not exceed 15% of one vertical scanning cycle. In a 525-line, 30-frame system, 15% of one vertical scanning cycle is 2.5 ms.

[f] An adequate bias resistor or other means is required to protect the tube in the absense of excitation.

TERMINAL DIAGRAM – Bottom View

Pin 1 - Heater
Pin 2 - Grid No.1
Pin 3 - Grid No.2
Pin 4 - Grid No.3, Cathode
Pin 5 - No Connection
Pin 6 - Plate
Pin 7 - No Connection
Pin 8 - No Connection
Pin 9 - Grid No.1
Pin 10 - Grid No.2
Pin 11 - Grid No.3, Cathode
Pin 12 - Heater



JEDEC 12EY